

## What is claimed is:

- 1. A method for obtaining a liquid sample having a decreased cellular or particulate concentration for optical examination comprising:
  - a) providing an apparatus comprising:

a sample chamber comprising

two containment walls, at least one of them being transparent for optical examination;

at least one wall for holding said containment walls at a distance, and enclosing an interior space;

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a separation wall comprising at least a first separation channel and a second separation channel, wherein the interior space of said sample chamber is divided into a first compartment and a second compartment by said separation wall;

a sample entrance into the first compartment; and

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a means for venting the sample chamber during filling;

- b) depositing a liquid sample into the sample entrance of said sample chamber;
- c) allowing the sample to flow from the sample entrance into the first compartment;

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f)

- d) allowing the sample to advance to the separation wall and the separation channels therein;
- e) allowing the sample to advance through the separation wall and the first and second separation channels;

allowing the sample to continue to advance until it reaches and stops at

- the end of the sample chamber; and
  - g) obtaining a liquid sample having decreased cellular or particulate concentration.

- 2. The method according to Claim 1 wherein said liquid sample is blood.
- 3. The method according to Claim 1 wherein said apparatus further comprises a moat surrounding the sample chamber.
  - 4. The method according to Claim 3 wherein said moat further comprises at least one capillary stop to prevent uncontrolled flow.
- The method according to Claim 3 wherein said liquid sample is blood.
  - 6. The method according to Claim 1 wherein said first separation channel is about 3 to 10  $\mu$ m deep by 5 to 50  $\mu$ m wide.
- The method according to Claim 1 wherein said second separation channel is about 0.5 to 1.5 μm deep by 50 to 1000 μm wide.
  - 8. The method according to Claim 3 wherein said first separation channel is about 3 to 10  $\mu$ m deep by 5 to 50  $\mu$ m wide.

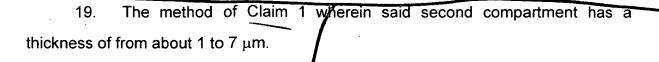
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- 9. The method according to Claim 3 wherein said second separation channel is about 0.5 to 1.5  $\mu m$  deep by 50 to 1000  $\mu m$  wide.
- 10. The method according to Claim 1 wherein said apparatus further comprises a plurality of notches in the interior space of the sample chamber.

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- 11. The method according to <u>Claim</u> 3 wherein said apparatus further comprises a plurality of notches in the interior space of the sample chamber.
- 12. The method according to Claim 1 wherein said apparatus further comprises a plurality of notches in the first compartment of the sample chamber.
  - 13. The method according to Claim\_3 wherein said apparatus further comprises a plurality of notches in the first compartment of the sample chamber.
- 10 14. The method according to Claim 10 further comprising after step (c), allowing the sample to flow past each notch in the first compartment; and after step (e), allowing the sample to flow past each notch in the second compartment.
  - 15. The method according to Claim 11 further comprising after step (c), allowing the sample to flow past each notch in the first compartment; and after step (e), allowing the sample to flow past each notch in the second compartment.
  - 16. The method according to Claim 12 further comprising after step (c), allowing the sample to flow past each notch in the first compartment.
  - 17. The method according to Claim 13 further comprising after step (c), allowing the sample to flow past each notch in the first compartment.
- 18. The method of Claim 1 wherein said second compartment has an internal volume which is smaller than the internal volume of said first compartment.



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- 20. The method of Claim 1 wherein said first compartment has a thickness of from about 10 to 50 μm.
  - 21. The method of Claim 3 wherein said second compartment has an internal volume which is smaller than the internal volume of said first compartment.
- 10 22. The method of Claim 3 wherein said second compartment has a thickness of from about 1 to 7  $\mu m$ .
  - 23. The method of Claim 3 wherein said first compartment has a thickness of from about 10 to 50  $\mu m$ .

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